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[1 Low power motion estimation design using adaptive pixel truncation](#)

Zhong-Li He, Kai-Keung Chan, Chi-Ying Tsui, Ming L. Liou

 August 1997 **Proceedings of the 1997 international symposium on Low power electronics and design**
Publisher: ACM Press

 Full text available: [pdf\(754.40 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#)

[2 Session 4: video processing and transformation: Rate adaptation transcoding for precoded video streams](#)

Zhijun Lei, Nicolas D. Georganas

 December 2002 **Proceedings of the tenth ACM international conference on Multimedia**
Publisher: ACM Press

 Full text available: [pdf\(186.66 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


In order to transmit pre-encoded digital video over heterogeneous networks, it is necessary to employ transcoding techniques that convert pre-encoded video streams into streams having different bit rates and quality. The specified problem is referred to as rate shaping or rate adaptation. In this work, we propose a new rate control scheme for H.263+ based video transcoding. The proposed rate control scheme is comprised of Frame-Layer bit allocation and Macroblock-Layer rate control. At the frame ...

Keywords: rate adaptation, rate quantization, scene variations, video transcoding

[3 Doctoral symposium - session II: Complexity management for video encoders](#)

Yafan Zhao, Iain E. G. Richardson

 December 2002 **Proceedings of the tenth ACM international conference on Multimedia**
Publisher: ACM Press

 Full text available: [pdf\(83.92 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)


Computational complexity is an important performance constraint for software-only video CODECs. The aim of this research is to develop a video coding system with variable, controllable computational complexity. Adaptive algorithms for DCT and motion estimation are proposed separately to reduce complexity of each function and maintain it at target level. An integrated approach to video CODEC complexity management is also addressed. This work will have potential benefit for a wide range of computa ...

[4 Services: Interactive media server with media synchronized RAID storage system](#)

Seung-Ho Lim, Yo-Won Jeong, Kyu-Ho Park



June 2005 **Proceedings of the international workshop on Network and operating systems support for digital audio and video NOSSDAV '05**

Publisher: ACM Press

Full text available: [pdf\(186.59 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We propose an efficient placement algorithm and per-disk prefetching method to effectively support interactive operations in the media server. Our placement policy is incorporated with an encoder having a special bitcount control scheme that repeatedly tunes quantization parameters to adjust the bitcounts of video frames. This encoder can generate coded frames sub-stream video blocks whose sizes are synchronized with the RAID stripe size, so that when various fast-forward levels are accessed ...

Keywords: bit count control, interactive media server, stripe size, video rate

5 **Multimedia coding and security: Improved p-domain rate control and perceived quality optimizations for MPEG-4 real-time video applications**

Michael Militzer, Maciej Suchomski, Klaus Meyer-Wegener
November 2003 **Proceedings of the eleventh ACM international conference on Multimedia**

Publisher: ACM Press

Full text available: [pdf\(412.39 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The paper describes bit rate control for a one-pass MPEG-4 video encoding algorithm in order to make it suitable for real-time applications. The proposed control method is of low computational complexity and more accurate than previous approaches. In result, the rate-control buffer size which highly influences the latency between a video sender and receiver can be decreased significantly. Additionally, a solution is proposed for increasing the perceived quality by introducing an advanced bit all ...

Keywords: "MPEG-4", "bit rate control", "live streaming", "p-domain", "quality optimization", "real-time", "video encoding"

6 **Poster 3: content track: A multiview video transcoder**

Baochun Bai, Janelle Harms
November 2005 **Proceedings of the 13th annual ACM international conference on Multimedia MULTIMEDIA '05**

Publisher: ACM Press

Full text available: [pdf\(409.16 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Video transcoding can convert a compressed video from one format to another format. In this paper, we propose a novel multiview video transcoder, which is used for bit-rate scaling of multiple compressed synchronized video streams. Different from the traditional joint transcoder for independent multiple program transcoding, the multiview video transcoder has one unique task to decorrelate spatial redundancies among video streams. A fast disparity estimation algorithm with the GOP-based disparity ...

Keywords: 3D video, multiview video transcoder, video compression

7 **Case studies: A low-cost and low-power multi-standard video encoder**

R. Peset Llopis, R. Sethuraman, C. Alba Pinto, H. Peters, S. Maul, M. Oosterhuis
October 2003 **Proceedings of the 1st IEEE/ACM/IFIP international conference on Hardware/software codesign and system synthesis**

Publisher: ACM Press

Full text available: [pdf\(541.20 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Video encoders are an important IP block in mobile multimedia systems. In this paper, we describe a low-cost low-power multi-standard (MPEG4, JPEG, and H.263) video/image encoder. The low-cost and low-power aspects are achieved by the right choice of

algorithms and architectures. In the algorithm front, an embedded compression technique for reducing the size of loop memory has enabled a single-chip low-cost realization of the encoder. In the architectural front, an efficient hardware-software pa ...

Keywords: ASIPs, hardware/software partitioning, low-cost, low-power, multi-standard, video encoder

8 An MPEG-2 video encoder LSI with scalability for HDTV based on three-layer

 cooperative architecture

Mitsuo Ikeda, Toshio Kondo, Koyo Nitta, Kazuhito Suguri, Takeshi Yoshitome, Toshihiro Minami, Jiro Naganuma, Takeshi Ogura

January 1999 **Proceedings of the conference on Design, automation and test in Europe**

Publisher: ACM Press

Full text available:  [pdf\(270.16 KB\)](#) Additional Information: [full citation](#), [index terms](#)

9 Dynamic frame rate control for video streams

 Sasan Pejhan, Ti-Hao Chiang, Ya-Qin Zhang

October 1999 **Proceedings of the seventh ACM international conference on Multimedia (Part 1)**

Publisher: ACM Press

Full text available:  [pdf\(531.89 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A mechanism for dynamically varying the frame rate of pre-encoded video clips is described. An off-line encoder creates a high quality bitstream encoded at 30 fps, as well as separate files containing motion vectors for the same clip at lower frame rates. An on-line encoder decodes the bitstream (if necessary) and re-encodes it at lower frame-rates in real-time using the pre-computed, stored motion information. Dynamic Frame Rate Control, used in conjunction with dynamic bit-rate control, a ...

Keywords: fast forward control, frame rate control, video streaming

10 Adaptive rate controlled, robust video communication over packet wireless networks

G. R. Rajugopal, R. H. M. Hafez

June 1998 **Mobile Networks and Applications**, Volume 3 Issue 1

Publisher: Kluwer Academic Publishers

Full text available:  [pdf\(977.91 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Video transmission over wireless packet networks is gaining importance due to the concept of universal personal communication. Further, it is considered an important step towards wireless multimedia. The challenge however is to achieve good video quality over mobile channels, where typically the channel conditions vary due to signal fading. Hence this paper investigates adaptive rate controlled video transmission for robust video communication under packet wireless environment. A combinatio ...

11 FPGA implementation of a novel, fast motion estimation algorithm for real-time video compression

 S. Ramachandran, S. Srinivasan

February 2001 **Proceedings of the 2001 ACM/SIGDA ninth international symposium on Field programmable gate arrays**

Publisher: ACM Press

Full text available:  [pdf\(450.80 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A novel block matching algorithm for motion estimation in a video frame sequence, well suited for a high performance FPGA implementation is presented in this paper. The


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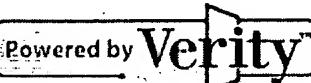
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